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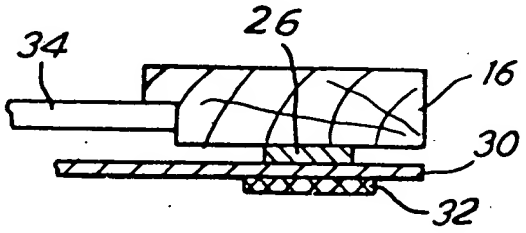
(71) Applicants
Broadworlds Limited, 117 New Road, Croxley Green, Rickmansworth, Hertfordshire
(72) Inventor
Alan John Day
(74) Agents
D. Young & Co., 10 Staple Inn, London WC1V 7RD

(54) Insulating roller blind arrangement

(57) A roller blind arrangement for a window, door or the like is characterised that the blind 30 and the window pane 34 together define an insulating space between them, the blind being held to the window frame at least along a major part of its longitudinal marginal portions by being held between a pair of strips 26, 32 of the kind which exert a magnetic force between them.

For example, a magnetised strip 26 may be secured to the vertical sides of the window frame, the roller blind 30 may extend across the top of the window, and ferromagnetic strips 32 may be applied to the vertical marginal portions of the blind when it is extended so that these portions are held onto the magnetised strips by magnetic attraction between the strips fixed to the window frame sides 16 and the applied strips 32.

FIG.2



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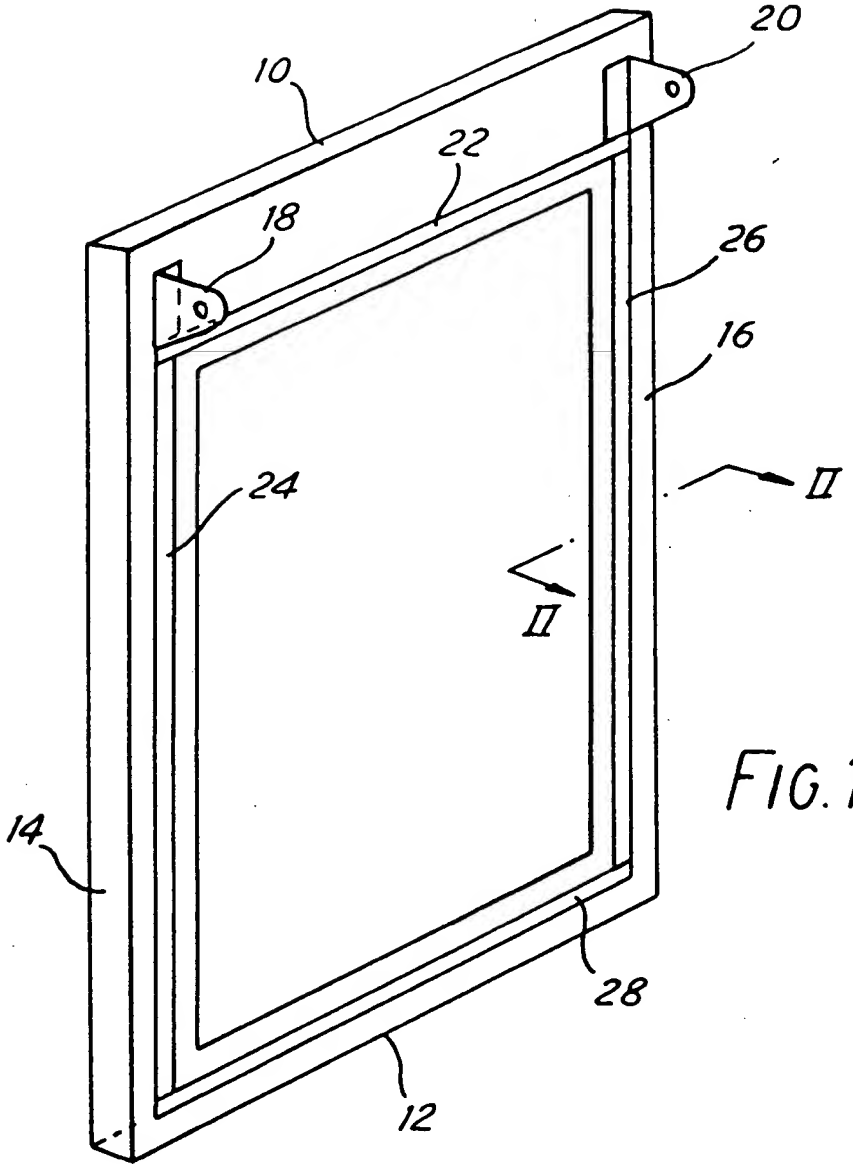

FIG. 1

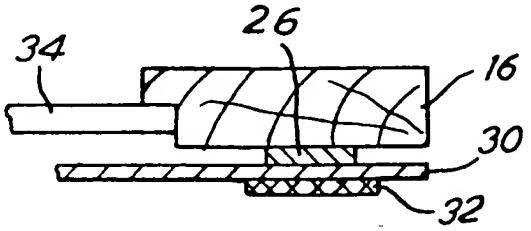

FIG. 2

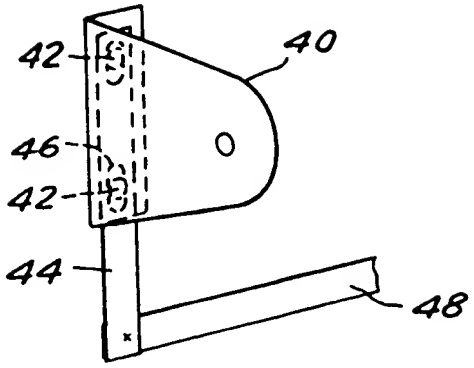

FIG. 3

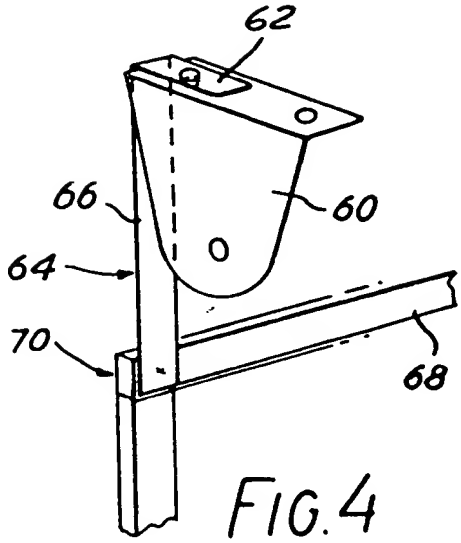

FIG. 4

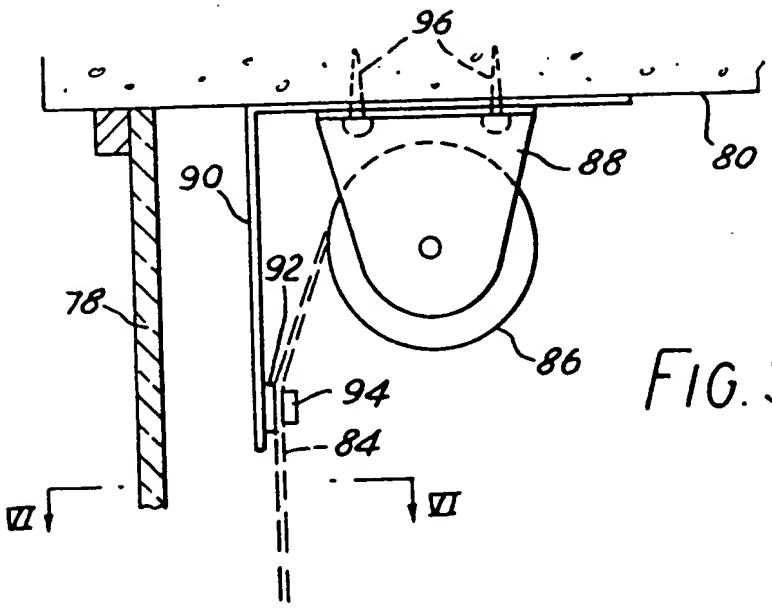

FIG. 5

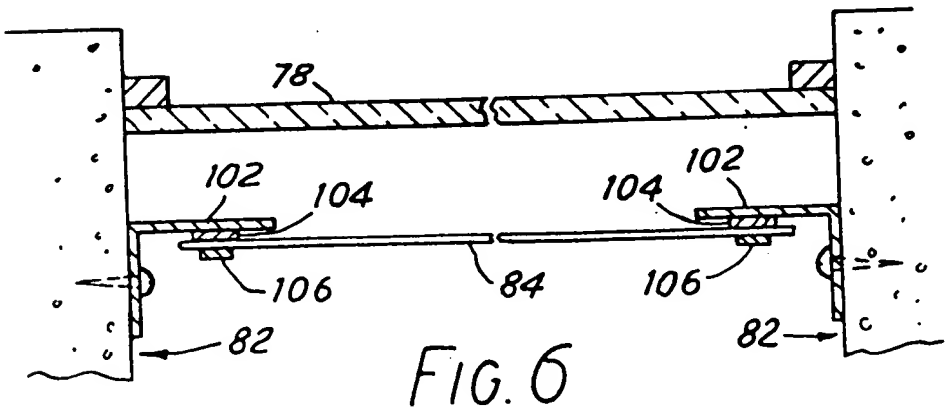

FIG. 6

SPECIFICATION

Roller blind arrangement

This invention relates to a roller blind arrangement.

There is a great need at present for economy in the use of energy and for a reduction in the cost of heating rooms and buildings. Some of the heat escapes through windows and it is known to use double glazing to minimise this loss. However, known systems of double glazing, while they can be used in addition to roller blinds, involve extra complications and expense when so used. Roller blinds are often desirable to reduce glare or improve privacy, and it would be desirable if insulation advantages could be achieved using a roller blind.

According to the invention, there is provided a roller blind arrangement for a window, door or the like characterised that the blind and the window pane together define an insulating space between them, the blind being held to the window frame at least along a major part of its longitudinal marginal portions by being held between a pair of strips of the kind which exert a magnetic force between them.

For example, a magnetised strip may be secured to the vertical sides of the window frame, the roller blind may extend across the top of the window, and ferro-magnetic strips may be applied to the vertical marginal portions of the blind when it is extended so that these portions are held onto the magnetised strips by magnetic attraction between the strips fixed to the window frame sides and the applied strips. In a converse arrangement, magnetic strips, e.g. of thin steel strip, may be secured to at least the vertical sides of the window frame and detachable magnetised strips may be applied over the marginal portions of the blind when the blind is in its "pulled down" position.

With either of these alternatives, there may additionally be provided a similar pair of strips for holding the bottom end of the blind tightly to the bottom of the window frame.

A similar arrangement may be applied on either side and optionally at the bottom of a door frame.

Alternatively the strips may be applied to a facing wall of a recess which contains a window or door; it is not essential that the strips be applied to a window frame or a door frame.

A pair of top strips are preferably provided, and a specially-designed roller support bracket may be used to facilitate their attachment to the top of a door or window frame.

The present invention also extends to a kit of parts for making a roller blind arrangement, the kit comprising at least a roller blind, a pair of brackets for securing it in position, a length of magnetised strip, and a length of ferromagnetic strip, and instructions for cutting said strips and for assembling them to produce a roller blind arrangement which together with a door or a window pane defines a heat-insulating space.

The invention will be better understood from the following particular description of an illustrative and non-limiting embodiment given with reference to the accompany diagrammatic drawings, in which:—

Figure 1 is a perspective view of one example of a roller blind arrangement in accordance with this invention, but with the blind itself and its roller omitted,

Figure 2 is a section taken in a horizontal plane, on the line II—II of Figure 1,

Figure 3 is a perspective view of one arrangement of top bracket showing how it is combined with a top strip;

Figure 4 is a perspective view of another possible arrangement of top bracket and top strip; and

Figures 5 and 6 show a further arrangement according to the invention useful when there are no surfaces on the window frame or surround suitable for receiving the fixing strips, Figure 5 being a side elevation and Figure 6 being a section on VI—VI of Figure 5, that is, looking vertically downwards.

Referring to Figure 1 and 2, there is shown a window frame having top, bottom and opposite side portions 10, 12, 14 and 16. These portions may, for example, be made of wood. A pair of brackets 18, 20 are fixed in any suitable manner, for example by screwing, to the top portion 10. These brackets serve to support a roller carrying a roller blind, the roller and blind not being shown as they are generally conventional in form. The blind is arranged so that its off-take point from the roll is closely adjacent to an upper magnetised strip 22 which is secured in any convenient way, for example by pressure sensitive adhesive, to the upper portion 10 of the window frame. Three other linear strips of magnetised material, seen at 24, 26 and 28 are secured to the respective portions 14, 16 and 12 of the window frame. Suitable permanently magnetic strips are known and are commercially available, and one may, for example, employ one which is a flexible polymer-bonded product coated on one side with a pressure sensitive adhesive, the magnetic property being achieved by orienting barium ferrite crystals in a polymer binder material during manufacturing of the strip. One may use, for example, the strip known as "PLASTIFORM" permanent magnet strip available from the household and hardware products division of the 3M Company. However, other magnetic strips may be used instead and the invention is not regarded as limited to the use of PLASTIFORM strip.

In use the invention, the roller blind is pulled down off the roller, not shown in Figure 1, the blind being shown at 30 in Figure 2. It is then temporarily held by hand in its desired position and a ferromagnetic strip 32 is placed over the blind 30 in registry with the strip 26. A like strip 32 is placed over the blind in registry with the strips 22 and 24, and, if it is desired to pull the blind down completely, it is placed so that it overlies the strip 28 and a similar ferromagnetic strip is placed over the blind in registry with the

strip 28.

In this way, an enclosed airtight space is defined between the blind 20 and the window pane (34 in Figure 2), said space being bounded by the blind, the pane, and the strips 22, 24, 26 and 28. Hence, the desirable characteristics of double glazing have been simply and inexpensively achieved with a roller blind arrangement.

Of course the strips could be reversed, that is to say strip 26 could be of steel and strip 32 could be of magnetised material. The arrangement would then function in basically the same way, with the film of the blind securely held between the two strips.

Figure 3 shows an arrangement for holding a top strip (e.g. 22 in Figure 1) in position when there is no suitable surface to which it can be affixed, e.g. by adhesive. Figure 3 shows one roller blind supporting bracket 40 which has holes 42 whereby it can be screwed or bolted to window or door surround. A metal strip 44, e.g. of springy steel has holes 46, e.g. elongated holes, therein and is secured at its lower end in any convenient way to a top transverse strip 48, which corresponds in function to strip 22 in Figure 1. There is a similar arrangement at the other end bracket of the roller blind, to support the other end of the strip 48. By trapping the strip 44 between the bracket 40 and its supporting surface, one can locate the strip 48 as desired in relation to the roller of the blind. Use of a springy strip 44 allows the strip 48 to take up a position either nearer or farther from the plane of the window, as may be necessary.

Figure 4 shows an alternative arrangement useful where the roller blind brackets are ceiling-hung. One bracket shown at 60 is bolted or screwed to a downwardly-facing surface and between it and the surface is located one limb 62 of an L-shaped strip 64. A second limb 66 of this extends downwardly and its lower end supports one end of a transverse top strip 68 which corresponds in function to strip 22 of Figure 1. A similar arrangement (but of course of the opposite hand) is provided at the other end of the roller of the blind, to support the other end of the strip 68.

In use, the roller blind film (not shown) may be trapped between the strip 68 and a top transverse magnetised strip indicated at 70. A left-hand side vertical magnetised strip is indicated at 72. As shown, the blind film is trapped between the strips 68 and 70 with the latter on the inner surface, that is, nearer to the window or door, but it will be appreciated that the blind film could equally well be located between the strips 68 and 70 with the strip 68 on the inner surface and the magnetised strip 70 on the outer surface.

Figures 5 and 6 illustrate an arrangement which can be used when there are no suitable surfaces to which the strips, e.g. strips 22—28 of Figure 1, can be secured. In brief, this arrangement involves using L-section angle members, e.g. of plastics material, fixed to a surround, to provide base surfaces to which the strips can be fixed. A window pane 78 is located in a recess defined by a ceiling surface 80 (Figure 5) and two vertical wall surfaces 82 (Figure 6). A roller blind including a film 84 wound around a roller 86 is supported by a pair of brackets, one of which is shown at 88 in Figure 5. The brackets are fixed to the ceiling in any suitable manner. In order to provide a support for a top transverse strip, an angle member 90 of L-shaped cross section is fixed to the ceiling surface 80 to extend across the recess. The length of the member 90 is slightly less than the width of the recess and preferably is equal to the width of the blind film 84. A first strip 92 is carried by the member 90 and this co-operates with a detachable transverse top strip 94 to trap the film 84 therebetween, as shown in Figure 5, when the film is pulled off the roller 86 in the conventional manner. The angle member 90 is shown as fixed to the ceiling by the same screws 96 that fix the brackets, but it will be realised that this is not essential. One of the first and second strips is ferromagnetic and the other is magnetised.

Figure 5 does not show the arrangement for locating the two vertical marginal edges of the blind. To achieve this, two L-section angle members 100 are fixed to the vertical surfaces 82 and extend with their lengths vertical. One flange 102 of each member 100 is located so that it is just behind a marginal region at a side of the film 84. Two vertical strips 104 are secured to and carried by the respective flanges 102 and these co-operate with respective vertical strips 106 which are detachable and can be placed over the marginal portions at the sides of the blind 84 to trap the blind between the strips using magnetic attraction in the manner previously described. If it is desired to fix the bottom edge of the blind in a similar way, and if no suitable surface is present, a similar method using an L-shaped angle member extending horizontally along the bottom of the recess may be employed.

The angle members may be plastics extrusions, or of metal, or other material as convenient.

From the above description, it will be realised that a kit of parts for a roller blind arrangement may comprise a roller blind, a pair of brackets for securing it in position, a length of magnetised strip, a length of ferromagnetic strip, and a plurality of angle members for providing support surfaces upon which strips can be placed.

The blind may be of plastics film, cloth, or other suitable material.

CLAIMS

1. A roller blind arrangement for a window, door or the like characterised that the blind and the window pane together define an insulating space between them, the blind being held to the window frame at least along a major part of its longitudinal marginal portions by being held between a pair of strips of the kind which exert a magnetic force between them.

2. An arrangement according to Claim 1 in which there are magnetised strips along the top,

the two vertical marginal portions and the bottom of the blind, and in which the magnetised strips co-operate with ferromagnetic strips placed in substantial registry therewith.

3. A kit of parts for making a roller blind arrangement, the kit comprising at least a roller blind, a pair of brackets for securing it in position, a length of magnetised strip, and a length of ferromagnetic strip, and instructions for cutting said strips and for assembling them to produce a roller blind arrangement which together with a door or a window pane defines a heat-insulating space.

4. A kit of parts for a roller blind arrangement which comprises a roller blind, a pair of brackets for securing it in position, a length of magnetised strip, a length of ferromagnetic strip, and a plurality of angle members for providing support surfaces upon which strips can be placed.

5. A roller blind arrangement substantially as herein particularly described with reference to, and as illustrated in, the accompanying drawings.

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